MODIFICATIONS TO SA400 DRIVE FOR APPLE 2

FOR M. BERG
FROM R. BALLUFF
Note Question - M Berg

1. Remove PC board from drive.

2. Remove the following parts from the PCB:
   A. Jumper at 1F
   B. r-pack at 1E
   C. chip at 3D (74195)

3. Cut the following traces on the front (componant side) of the board at the IC pins listed:
   A. 3B-11
   B. 2B-3
   C. 2C-11
   D. 2C-13
   E. 3D-1 (both traces)
   F. 3D-4
   G. 3D-5
   H. 3D-6
   I. 3D-7
   J. 3D-9

4. Cut the following traces on the rear (solder side) of the board at the IC pins listed:
   A. 2E-13
   B. 2E-9
   C. 3B-12
   D. 2C-1
   E. 4D-1
   F. 4D-3
   G. 4D-13
   H. between 3D-2 and 3D-3
   I. 3D-2
   J. between 3D-3 and 3D-6
   K. 3D-4
   L. 3D-5 (both traces)
   M. 3D-10
   N. 3D-15 (both traces)

Not sure about 18?

5. On the solder side, cut the traces to J1 pins 8 and 18 so that the solder feed-thrus are still connected to the J1 fingers (I.E. on the circuit side of the feed-thru).

6. On the solder side, cut the grounding traces to J1 pins 9,11,13,15,17 and 19.

7. Install a 2K 14 pin r-pack at 1E.

8. Install a 16 pin socket and a 74157 at 3D (LS is ok) (74LS157)

9. On the solder side, install the following jumper wires:
   A. 1F-1 to 1F-14
   B. TP11 to TP13

9. Solder side added jumper wires continued.....

C. 3B-11 to 3B-12
D. 2C-2 to 3B-12
E. 2E-13 to 2C-11
F. 2E-12 to 2C-~~12~~13
G. 3D-1 to 3D-8
H. 3D-4 to 4D-3
I. 3D-7 to 4D-5
J. 3D-9 to 4D-13
K. 3D-12 to 4D-1
L. 3D-2 to J1-2
M. 3D-5 to J1-4
N. 3D-11 to J1-6
O. 3D-14 to J1-8
P. 2F-12 to 1E-5
Q. 3F-3 to 1E-4
R. 1E-7 to 1F-2
S. 2C-1 to 1F-4
T. 2E-13 to J1-18 (second wire on 2E-13)
U. 1E-14 to 1E-12
V. 3D-15 to 2C-2 (second wire on 2C-2)

****** PERFORM STEPS 10,11 AND 12 ONLY IF DRIVE POWER IS TO COME
****** FROM THE APPLE CONTROLER. IF AN EXTERNAL POWER SUPPLY IS
****** USED, SKIP TO STEP 13

also question 8? 3?

10. Connect a wire between J1-11 and J2-4 (+5)

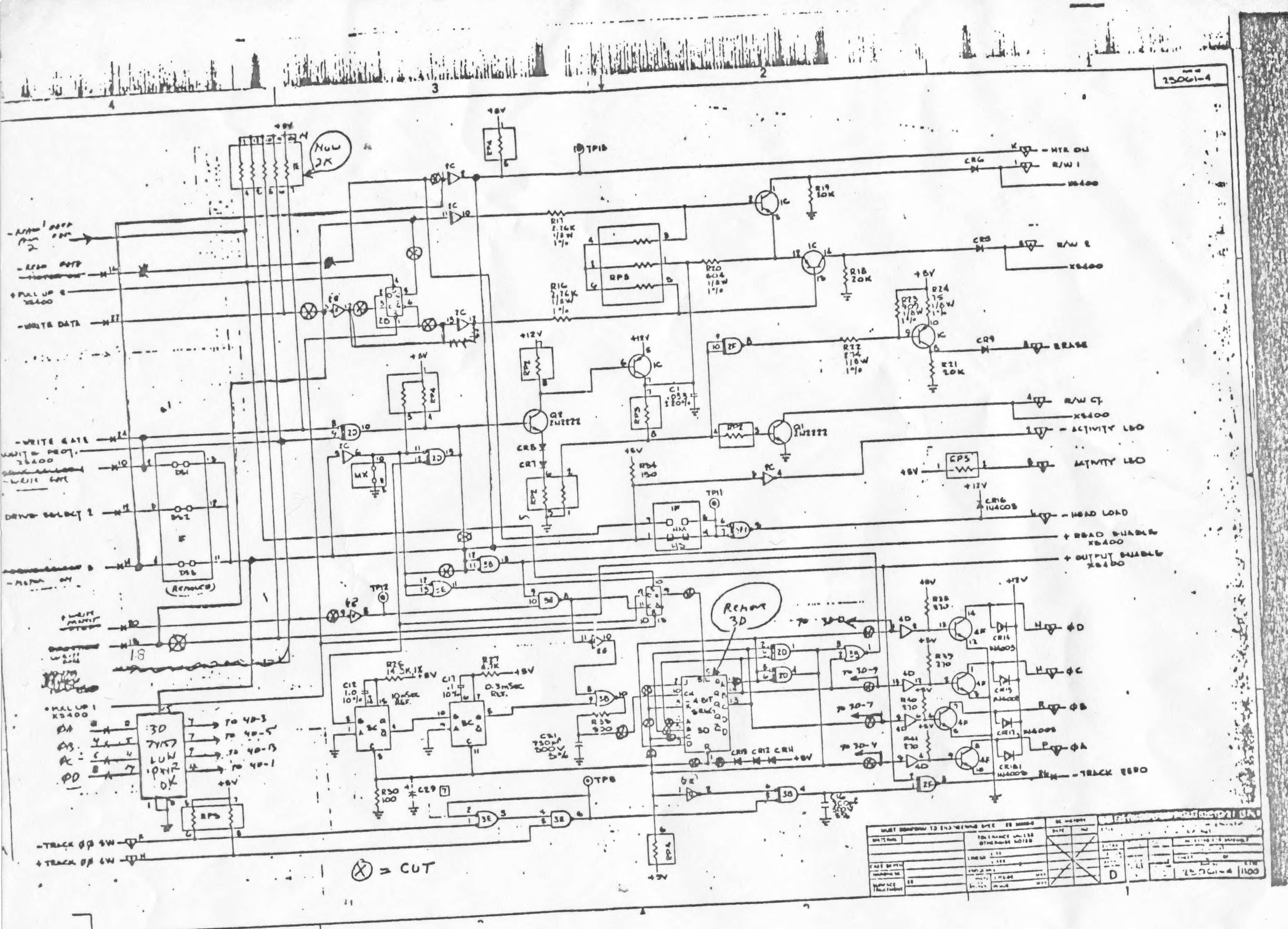
11. Connect a wire between J1-12 and J2-4 (+5)

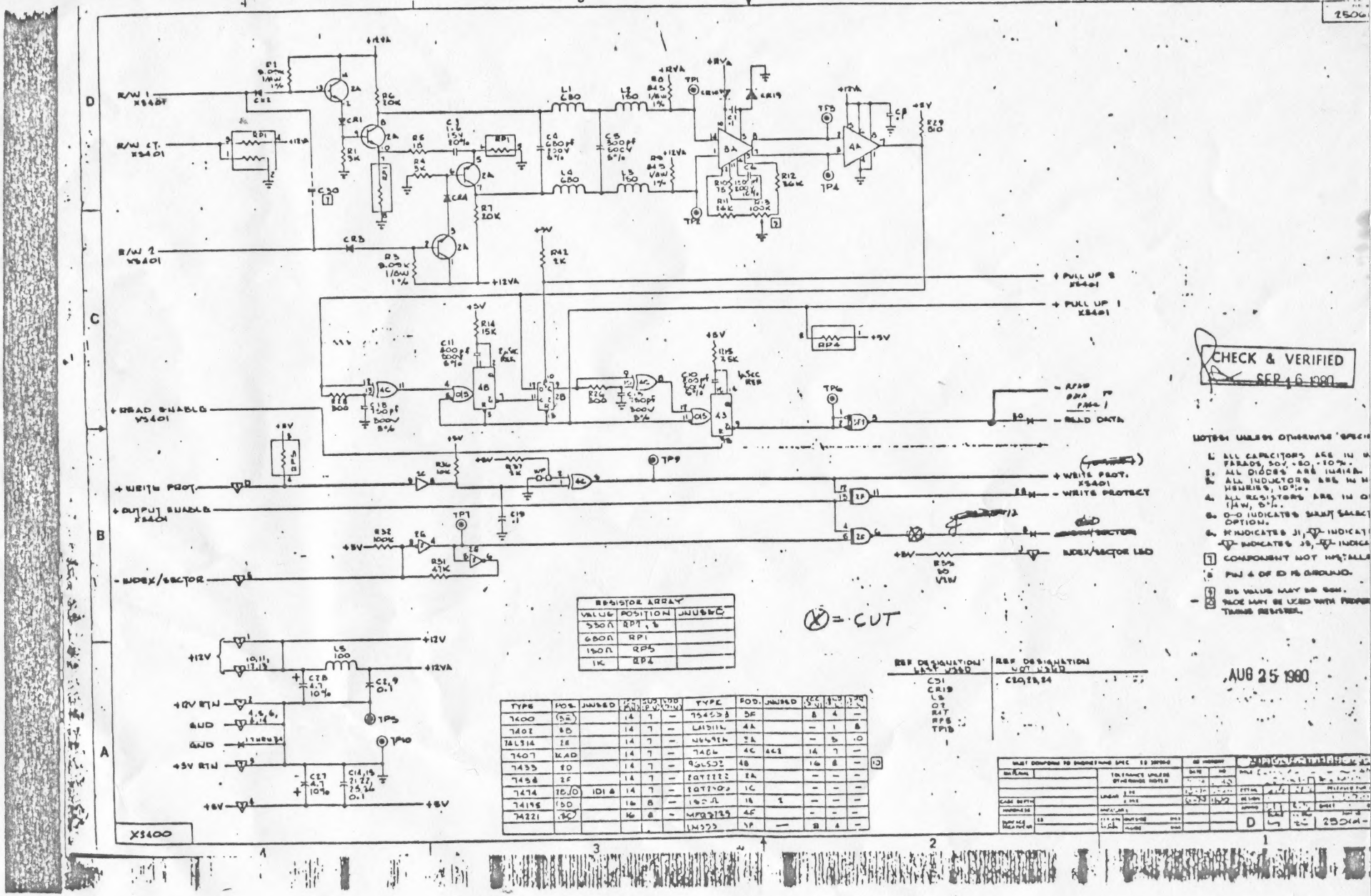
12. Connect a heavy wire (20 gage) between J2-1 and J1-13,15,17 and 19 (+12 source)

13. Inspect the work and replace the PCB.

By the time you are making these modifications, we will have ratified values - You can call me at 742-6668. or (742-5160) Jim Allemandi

Ken I remind reform to source but can relay questions if you have any - Mike


23061-4
Now 2K
+5V
TP13
-HTR ON
R/W 1
XB400
R/W 2
XB400
R17 2.76K 1/8W 1%
R16 2.76K 1/8W 1%
RP8
R20 604 1/8W 1%
R19 10K
R18 20K
R24 75 1/8W 1%
R21 20K
ERASE
C1 .033 ±20%
Q2 2N2222
Q1 2N2222
R/W CT
XB400
-ACTIVITY LED
ACTIVITY LED
CR16 1N4003
-HEAD LOAD
+READ ENABLE XB400
+OUTPUT ENABLE XB400
-WRITE DATA
-WRITE GATE
WRITE PROT. XB400
DRIVE SELECT 2
-MOTOR ON
(REMOVED)
TP12
TP11
TP8
C12 1.0 10%
C17 .1 10%
10mSec REF.
0.3mSec REF.
R30 100
Remove 3D
4 BIT SHIFT
TO 4D-3
TO 4D-5
TO 4D-13
TO 4D-1
TO 3D-9
TO 3D-7
TO 3D-4
ΦD
ΦC
ΦB
ΦA
-TRACK ZERO
-TRACK 00 SW
+TRACK 00 SW
(X) = CUT
D
1100


R/W 1 XS401
R/W CT. XS401
R/W 2 XS401
+ PULL UP 0 XS401
+ PULL UP 1 XS401
+ READ ENABLE XS401
+ WRITE PROT.
+ OUTPUT ENABLE XS401
- INDEX/SECTOR
- READ DATA
- WRITE PROTECT
- INDEX/SECTOR LED
+12VA
+12V
+5V
+8V
GND
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
CHECK & VERIFIED
SEP 16 1980
NOTES UNLESS OTHERWISE SPECIFIED
1. ALL CAPACITORS ARE IN MICROFARADS, 50V, ±20, -10%.
2. ALL DIODES ARE 1N4148.
3. ALL INDUCTORS ARE IN MICROHENRIES, 10%.
4. ALL RESISTORS ARE IN OHMS, 1/4W, 5%.
5. O-O INDICATES SHUNT SELECT OPTION.
6. ⊗ INDICATES J1, ⊗ INDICATES J8, ⊗ INDICATES J9.
1 COMPONENT NOT INSTALLED
2 PIN 4 OF ID IS GROUND.
3 R15 VALUE MAY BE 68Ω.
4 R16 MAY BE USED WITH PRECISION TRIMMER RESISTOR.
RESISTOR ARRAY
VALUE | POSITION | JUMPERED
330Ω | RP1, 5
680Ω | RP1
150Ω | RP3
1K | RP4
⊗ = CUT
REF DESIGNATION NOT USED
C21, 23, 24
REF DESIGNATION USED
C31
CR19
L8
Q7
R47
RP5
TP10
AUG 25 1980
XS400
D
250M-